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ABSTRACT

An attempt is made, using a partial review of the literature, to present a non-technical overview of some of the child-related issues in simultaneous bilingualism. While controversy still rages in the area of bilingualism research, some definite changes can be discerned over the past 40 years. Opinion has shifted from a deficiency perspective to an attempt to identify a process. Increasingly, researchers are attempting to isolate the many variables involved in linguistic and communicative competence. Some of these variables are the underlying intelligence of the speaker, socioeconomic and educational background, balance and quality of input, social context, and socio-political acceptance and acceptability of the two languages spoken. While there is an abundance of available research and literature on the subject, there is a corresponding dearth of agreement about most elements. Most researchers agree that more work is required before a consensus is possible about the relative benefits and disadvantages of bilingualism when separated from extraneous variables. Discussion focuses on cognitive factors in language acquisition, cognitive effects of bilingualism, patterns of acquisition, and the difficulty of maintaining bilingualism. A concluding neurophysiologic note and a summary are also included. (RH)

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SIMULTANEOUS BILINGUALISM:

An Overview

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Simultaneous Bilingualism: An Overview

Abstract

Abstract/Introduction

The research literature on bilingualism reflects a myriad of approaches over the past 100 years. The reader of this literature is struck by the seemingly limitless approaches to the issues, questions and concerns of bilingualism. Each piece of research, because of the complexity of the topic, represents only a splintered view of the subject matter. Unless very strictly delimited, each area of research becomes unwieldy. For the nonspecialist reader seeking to find an overview of the topic, it becomes necessary to pass through the entire field of linguistics, psycho- and neuro-linguistics, as well as language acquisition, in order to 'come up to speed' and assimilate the information. This author perceived a need for a less technical overview, encompassing some of the important issues inherent in this question.

This document reflects a partial review of the literature on bilingualism, and the consequent integration of some of the findings. An attempt is made to provide good resources, definitions and a brief description of the major questions related to simultaneous bilingualism as it relates to young children.

Relation of bilingualism to cognitive development, optimum means of acquisition, order of acquisition, complications and benefits will be discussed. Although some references are made to *sequential* bilinguals, this research deals only with *simultaneous* bilingualism in children and its implications.

DEFINITION

What the research in bilingualism consistently lacks is agreement. Whether one is looking for definitions or experimental results, the range is wide and varied. Garcia (1985) describes searching for a comprehensive definition of bilingualism and finding a 'continuum of definitional attempts' ranging from general to subject specific. "[D]ual acquisition of language in a one-person, one-language home environment." is how Ianco-Worrall (1972 p.1391) defines bilingualism. Siguan & Mackey (1987, p. 13) provide a narrower definition. They propose to call a person bilingual "when, in addition to his first language, he is similarly proficient in another language and has the ability to use either of them to equal effect in any circumstances." Obviously, this definition rules out a large proportion of those considered to be bilinguals by much of the general population.

Albert & Obler (1978) discuss the considerations other researchers include in *their* definitions. These include linguistic competencies --passive or productive--in both languages; degree of proficiency; and the distinction between 'polyglots' (e.g., speakers of more than two languages) and bilinguals (e.g., speakers of two specific languages).

What is most important, is to note the specific definition applied in the given research one is reading. Albert & Obler (1978) subscribe to a purposely vague (Weinreich, 1953) definition, stipulating that any research must specify the more detailed criteria considered in subject selection.

This writer has found that such criteria are presented, and vary tremendously from one study to the next.

COGNITIVE FACTORS in Language Acquisition:

"An issue of interest to scholars and teachers alike is whether children's cognitive development depends on the emergence of language or whether children learn to think and thus are enabled to learn language (Pflaum, 1986, p. 6)." This 'chicken or egg' question is central in the controversy about bilingualism in general and specifically as it relates to simultaneous bilingualism. Slobin's (1973) construct suggests that semantic learning depends on cognitive development. Children talk about what they know, whether or not they have the formal structures for doing so. Stevens (1984) bases her research on the premise that language acquisition represents an interaction between cognitive development and linguistic development. Her schema rests on the direct transfer of an existing cognitive framework to language learning. Language strategies are then applied by the child, to other problems, in the course of her(his) general development to complete the cycle.

Cairns and Cairns (1976) suggest a developmental progression leading to language: the development of concepts; then, of strategies for comprehension and production of sentences before the child knows the full grammar; followed by strategies to figure out the grammar, bit-by-bit, and finally the development of linguistic rules.

Hakes (1980) sums up a review of other researchers' views. He states that if there is any consensus it is that a particular kind of cognitive achievement is a prerequisite for some related kind of linguistic development. However, he cautions, cognitive development is a necessary *but not sufficient*,* condition for linguistic development.

This leads us to another major area of controversy in the bilingualism arena. To what extent does bilingualism enhance or impede cognitive development?

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*Emphasis mine

COGNITIVE EFFECTS of Bilingualism:

The controversy over the relative benefits/detriments of bilingualism has been raging in the U.S. for almost a hundred years. It was accepted as fact earlier in this century (1920's onward) that bilinguals were of lower intelligence and their bilingual status was had at great (and unmerited) personal cost in the form of reduced grammatical skills, lesser vocabulary and poor performance on I.Q. types of tests. Naturally, socio-political issues had a great part in this debate. Even today, a battle royal rages over the question of bilingual education, the underlying emotional/affective causes of which it is very difficult to separate from the facts.

"It is not clear whether the bilingual children in these studies were at all bilingual in their home language and English. Yet, on the basis of such studies using social [*e.g., having a foreign last name*]** rather than linguistic criteria, conclusions were drawn as to the effects of linguistic variables on intelligence. The point here is that language is a salient characteristic of children from immigrant and minority backgrounds that provides an opportune dumping ground for developmental problems that may or may not be related to language" (Hakuta & Garcia, 1989, p.374).

Fortunately, with more sophisticated understandings of second-language acquisition and the nature of bilingualism, a relatively consistent set of answers to some fundamental questions about the linguistic and cognitive development of bilingual children has emerged (Hakuta & Garcia, 1989).

One way this sophisticated understanding has been demonstrated is in the realization that verbal measures are not 'fair' to bilinguals. As late as 1953, Darby stated in a review of ten years' of testing, that while bilinguals' scores on verbal measures are depressed, the inferiority does not hold when the tests are of a non-verbal type, particularly when subjects are of the same socioeconomic class. When tested on non-verbal measures, bilinguals' performance changes for the better.

It seems quite consistent in the literature that higher degrees of --balanced-- bilingualism are associated with higher levels of cognitive attainment (Diaz, 1983). Included in the measures are cognitive flexibility (Ianco-Worrall, 1972, Amodeo & Arnberg, 1983; Garcia, 1985), metalinguistic awareness (Hakes, 1980; Hakuta & Garcia, 1989; Garcia, 1985;Ianco-Worrall, 1972; Ben-Zeev, 1977; Kessler, 1984), concept

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** Note does not appear in original

formation (Peal & Lambert, 1962), and creativity (Oksaar, 1975). It must be remembered, however, that these advanced attainments hold (only) in the case of **balanced** bilinguals.

The term **balanced** bilingualism is used to differentiate speakers equally comfortable in their two languages from those speakers who have a **dominant** and **subordinate** language. The greater the degree of imbalance between the languages, the lower the performance on cognitive measures (Garcia, 1985). Hakuta & Garcia (1989) suggest that all other things being equal (this is difficult to control), higher degrees of bilingualism are associated with higher levels of cognitive attainment (Diaz, 1983) They go on to delimit the advantage further: only where the second language is added as an enrichment to the first and not at the expense of the native language, does this rule hold.

A much quoted study by Ben-Zeev (1977), concludes that bilinguals understand the arbitrary nature of syntactic structure and they are better able to treat words as desemanticized units within a larger syntactic code system. The results were interpreted to mean that bilinguals have as good a grasp of ordinary grammatical paradigms as monolinguals, but their approach is more analytic and 'goes beyond the mastery of ordinary syntactic rules.' However, semantically, the bilinguals performed more poorly on association tasks than had been predicted. This was attributed to the poor vocabulary of bilinguals.

On two tests on attention to and readiness for reorganization of structure, the bilinguals tested superior only on the former. Children were able to isolate the basic dimensions underlying matrices, but not more able to reorganize them. They seem to have developed special facility for seeking out the rules and for determining which are required by the circumstances (Ben-Zeev, 1977).

Amodeo & Arnberg's (1983) review of other studies using a variety of measures include Ianco-Worrall's (1972) finding of early ability to separate word sound from word meaning [this is also noted by Leopold]; Oren's (1981) demonstration of greater cognitive flexibility with regard to naming and relabeling objects [also mentioned by Bialystok (1986)]; Liedtke and Nelson's (1968) findings of significantly better performance by bilinguals in a Piaget (conservation of length) task; and superiority in divergent thinking tasks by Carringer (1974), and Landry (1974).

Some nonlinguistic explanations offered by Amodeo & Arnberg (1983) for these superior performances are:

1) the greater amount of social interaction and explicit teaching which the bilingual child is exposed to as a result of learning two languages (Liedtke & Nelson, 1986);

2) the exposure to an enriched environment (Peal & Lambert, 1962);

3) a greater flexibility in thinking due to having to switch between two languages (Balkan, 1970)

Linguistic explanations include the objectification hypothesis of Cummins & Gulutsan (1975). This hypothesis states that the bilingual child attends to the essential attributes of objects and to his/her linguistic operations as a result of hearing two languages

As early as 1939, Leopold reported a general cognitive plasticity for his young bilingual subject. He suggested that linguistic flexibility (in the form of bilingualism) generalized to non-linguistic, cognitive tasks (Garcia, 1985). Other studies (Keats & Keats, 1974) also demonstrated learning transfer from one language to the other, e.g., tasks learned in one language were acquired in both.

The chicken/egg question re-enters our discussion at this point. Several researchers suggest the possibility that it may take a certain amount of intelligence to become a balanced bilingual (Amodeo & Arnberg, 1983, citing Peal & Lambert, 1962). Amodeo and Arnberg continue to caution that using balanced bilinguals as subjects may have the effect of confounding the factor of general intelligence with bilingual ability (Wagner, 1980)

In their summaries of cognitive differences between mono- and bilinguals, most researchers suggest caution in applying individual results to broad generalizations. Most of the researchers reviewed by this writer feel that much more research and further experiments are required before this issue is put to rest.

Garcia (1985) discusses numerous studies and hypotheses about cognition and how it relates to bilingualism. His summary provides a balance between the various points of view.

> "In sum, it is not necessary to account for differences in bilingual (balanced or not) and monolingual's cognitive performance in (sic)the basis of a cognitively advantage/disadvantaged conceptualization. Instead, it remains possible that individual differences in intellectual functioning, combined with the support/non-support of the social context for acquiring linguistic and academic skills, are the factors responsible for any specific differences in bilingual and monolingual performance on cognitive measures."

PATTERNS of Acquisition

The complexity of bilingual language acquisition can better be appreciated when viewing how children become bilingual. One of the few areas in which researchers appear to agree, is that the one-person, one language exposure is optimum to bilingual acquisition. A distinction is made between language acquisition and language **learning**. Language acquisition is the initial, infantile process, to which no conscious, cognitive effort is brought. Language learning is of the later, conscious type, as occurs in sequential learners of language, e.g., having a good base in a language and going on to learn another.

The number of variables determining the form and content of this acquisition seem nearly limitless. Among the major determinants, however, are language environment (Kessler, 1984), acceptance of the L_2 society of L_1 speakers (Hakuta & Garcia, 1989); restriction of one of the languages to certain domains (Amodeo & Arnberg, 1983); social context (Garcia, 1985); and teaching and drilling (Oksaar, 1981).

Most researchers agree that there is a similar pattern of continuous [L_1 - L_2]*** development, although identifiable stages appeared in which one language forged ahead of the other (Huerta, 1977). These findings suggest (Garcia, 1985) that some children may very well develop an 'interlanguage' in addition to the acquisition of two independent language systems later in development. Dulay & Burt (1972, 1973) concluded that identifiable English linguistic errors were much like those of young children acquiring English as a first and only language.

Hakuta & Garcia (1989) state that based on current research, a reasonable view is that L_2 and L_1 acquisition are guided by common principles across languages and are part of the human cognitive system. This structural view based on McLaughlin (1987), claims no hampering effect of learning a second language upon the first. Rather, the rate of acquisition of a second language is highly related to the proficiency level in the native language, which suggests that the two capacities share and build upon a common underlying base rather than competing for limited resources (Cummins, 1984).

Amodeo & Arnberg (1983), present the pro and contra arguments of various researchers regarding language development of mono- versus bilingual children. While a number of studies agree that vocabulary levels are depressed in bilinguals (e.g., Doyle,

*** "Spanish/English" in original

Champagne, & Segalowitz, 1977; Smith, 1931; Ben-Zeev, 1977) contradictory studies by Jensen (1962), Padilla & Liebman (1975), and Padilla & Lindholm (1976, 1977) and others show that bilingual children develop language at the same rate as monolinguals in each of their languages.

Leopold's (1939-1949) studies of his daughter Hildegard, demonstrate the division between her comprehension ability, which appeared to develop smoothly in both languages, and her fluctuating production ability. Albert & Obler (1978) give examples from linguistic studies of bilingualism to support the theory that language production and language perception systems are to some degree independent of each other. They theorize that there is a difference in cognitive style between mono- and bilinguals; differences in perceptual strategy --they posit--relate to differences in cerebral organization for language. Further, bilinguals mature earlier in terms of cerebral lateralization for language and in acquiring skills for linguistic abstraction. Bilinguals have better developed auditory language skills than monolinguals, but no clear evidence of difference in written skills.

Kessler (1984) describes a two-stage bilingual acquisition. She posits that (until about 2 years and 6 months, infants who experience dual language input from the onset of language appear to form one single language system comprised of elements of both languages. This **mixed language system** is constructed from elements of two languages. Children create a cognitive construct to attempt to explain and contain all the linguistic elements into the one **undifferentiated** system. It is important to note that this undifferentiated system is a unique system, distinct from either of the two languages presented to the child. "In this way, the process of constructing the undifferentiated or mixed language system parallels the creative construction process that distinguishes the child language system of monolingual children from the adult system (Brown, 1973).

While in this stage, various problematic elements of production occur.

Typically, Kessler states, children juxtapose words from both languages in a single utterance. Such expressions also illustrate normal developmental syntactic processes for monolinguals--omissions of obligatory function words and morphological markers. On the lexical level, generally, children at this stage do not know the names in both languages for an object (Volterra and Taeschner, 1978). The phonological (sound) system varies with the balance between the two languages and normal developmental processes.

The general order of acquisition appears to be: easy sounds first, dominant language elements before subordinate language elements; avoidance or difficult to

produce sounds. As with monolinguals, development proceeds from holophrastic to syntactic, rule-governed utterances. Kessler refers to Titone (1983), who feels that bilingual development in young children follows a regular course, constant throughout different children and different ages. [See also Albert & Obler, 1978,p. 225-226 for a discussion of language differentiation as it pertains to optimal ages for language learning for proficiency.]

Differentiated systems seem to appear after about 2 years 8 months of age--varying with interaction of input conditions, language balance, and other linguistic and sociolinguistic variables according to Kessler, (1984). She goes on to say that differentiation may be identified when the child starts to use the two languages distinctly to communicate with different people in different languages.

Once differentiated into two systems, language alternation or **code-switching** becomes routine--depending on the conditions represented by the person addressed or the specific situations. That is, children can switch to the appropriate language for differing people and settings. Ease of switching, as with ease of learning, depends largely on degree of balance between the two languages. Periods of silence, or refusals to communicate may occur during difficulty using a subordinate language.

Among the problems exhibited by children with unbalanced languages, is mixing--using words from both languages mixed together; and interference--the transfer of elements from one language to the other. With independence of the two **codes** (language systems), the bilingual individual moves rapidly and, it would seem, effortlessly from one linguistic system to another as the circumstances change (Siguan & Mackey, 1987).

All this is building to what is called **communicative competence** consisting (according to Kessler, 1984) of four parts: **grammatical, sociolinguistic, discourse** and **strategic** competences.

Kessler points out that bilingualism is a social process (also discussed by Garcia, 1985, Hakuta & Garcia (1989); Amodeo & Arnberg (1983); and others,) point out that bilingualism is unlike monolingualism in that it is a <u>non</u>universal achievement. Knowledge--both conscious and unconscious--about language, and the skill to use it underlie actual communication. Viewing the four areas of communicative competence, she feels, give a better appreciation for the task of becoming bilingual.

Grammatical competence refers to the mastery of formal language features--the language code. This is also known as linguistic competence. Included in linguistic/grammatical competence is the ability to recognize at a subconscious level, the phonological, syntactic, and lexical features of a language and the skill to combine these features in pronunciation and word and sentence formation.

Sociolinguistic competence addresses the sociocultural rules of language use which define the appropriate use of language in a given context. Oksaar (1981) discusses such 'culturemes'--culture linked elements of language--such as greeting, thanking and comprehension of indirect requests. Sociolinguistic competence involves knowing what to say in a situation and how to say it, or even when to remain silent. Little is known about pragmatics for normal L_1 development, even less for child bilinguals; nevertheless, sociolinguistic competence is no less important than grammatical competence.

Discourse competence is concerned with the connection of a series of utterances to form a meaningful entity. Discourse competence, like other aspects of communicative competence takes place over many years and represents a long process.

Strategic competence is comprised of the means used to compensate for breakdowns in communication due to inadequate knowledge of the rules in one or more aspects of communicative competence. This involves both communication strategies (Corder, 1981) (or devices used to communicate effectively) and learning strategies (or processes used to construct the rules of a language). Naturally, there are various strategies to cope with a variety of changing conditions.

Kessler (1984), sums up communicative competence as a complex interaction of its four components. She notes that while the precise nature of the interaction is still in question, the acquisition of communicative competence in two languages must include a cognizance of the interaction between the two language systems.

The issue of communicative competence is often cited as dependent upon the age of the learner. This is primarily an issue of **sequential** bi- or polylingualism. Generally the controversy rages over what age, if any, is a cut-off point for native-like proficiency. Albert & Obler (1978) suggest that 6 years, rather than the post-puberty cut-off suggested by others is the actual one. With this, as with other issues in this area, studies can be found to support one's favorite (own) point of view. Here again, is an area requiring significant further research for resolution.

In summary, Amodeo & Arnberg (1983) point to the work of Carroll (1969) and Taylor (1974) in suggesting that although simultaneous bilingualism may cause an initial delay in language development, it may be easier for the child in the long run because previously established habits do not need to be overcome.

Bilingualism is Difficult to Maintain

Unlike other elements of language acquisition, second language is liable to atrophy without constant use and practice. Unless a child is continually exposed to the language and environment of a language, it is difficult to maintain not only balance, but the language itself.

Similarities between two languages can initially aid learning, but without constant practice, the second language quickly fades from useable memory. Ruth Berman (1979) discusses the entry/re-entry of her child into Hebrew/English after prolonged absences. She goes through periods of greater developmental errors, typical of Hebrew monolinguals prior to around age four, and accompanied by increasing evidence of systematic transfer of syntactic patterns from Hebrew into her English usage.

An interesting neurophysiologic note

It has been hypothesized that there are actually physiologic differences between the brains of mono- and bilinguals. The distinction is made between **coordinate** and **compound** bilingualism.

The coordinate bilingual has the two languages organized as two separate systems, whereas the truly **compound** individual is assumed to have the two languages organized as a single system (Albert & Obler, 1978). For the neurolinguist, these terms must correspond to some mechanism or organizational principle in the brain. The studies of Albert & Obler may prove relevant in understanding specific parameters and mechanisms of bilingualism as they relate to separate or same language centers in the brain. They found that coordinates relied more on the meaning in processing the words, whereas compounds relied more on the nonmeaning parameters like language label or physical features. As with all the foregoing questions related to bilingualism, there is little agreement here.

It is posited that rather than total coordinate or total compound bilingual, individuals are on a continuum. One distinction is that compounds may be those who acquired both languages during the vital formative years (i.e., before 6 years old) versus the coordinates who learned their second language after this period. Others (Caramazza et al., 1973) suggest compounding for input, coordination for output.

Research is presented implying that knowledge of numerous languages develops the brain, whereas illiteracy keeps in underdeveloped. They suggest that different performance by bilinguals may represent different cerebral lateralizations for the two languages.

There is evidence that language is less lateralized in bilingual adults than in monolingual adults. They present both arguments for interference effect: that coordinate bilingual has the two languages better separated and so is less susceptible to interference; or that the compound bilingual was obliged to develop and exercise some mechanism for keeping the two languages apart and so becomes less susceptible than the coordinate bilingual to interference.

Albert & Obler leave us with the main conclusions as: language is organized in the brain of a bilingual in a manner different from that which might have been predicted by studies of cerebral organization for language in monolinguals; and that studies of bilinguals demonstrate not only the left hemispheric role in language but also a major right hemispheric contribution.

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SUMMARY

An attempt has been made, using a partial review of the literature, to present a non-technical overview of some of the issues in simultaneous bilingualism. While controversy still rages in the area of bilingualism study and research, some definite changes can be discerned over the past forty years.

Opinion has shifted from a deficiency perspective to an attempt to identify **a process**. Increasingly, researchers are attempting to isolate the myriad of variables involved in linguistic and communicative competence. Some of these variables are underlying intelligence of the speaker; socio-economic and educational background; balance and quality of input; social context; and socio-political acceptance and acceptability of the two languages spoken.

While there is an abundance of available research and literature on the subject, there is a corresponding dearth of agreement about most elements. Most researchers agree that even more work is required before a consensus is possible about relative benefits and disadvantages of bilingualism **when separated from extraneous variables**. Perhaps this is really the challenge-- identifying language-specific variables of bilingualism.

GLOSSARY*

Cognitive - Having to do with mental processes

Grammar - study of the organization of language

Holophrastic - use of phrases in place of discretely understood words

Lexeme - a precise term for 'word' which refers to a semantic unit in a language
Lexical - having to do with vocabulary

Morphological - grammatical *

Phoneme - smallest unit of sound in a language

Phonemic - having to do with sound

Pragmatics - rules for using language appropriately

Semantics - meaning of an utterance (as opposed to form or syntactics)

Strategy - means used to resolve linguistic problems in communication

Syntax /Syntactic - structures of utterances in a language, including word order

***Note**: no attempt has been made to include elements already defined in the text.

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